

CLAIMS

What is claimed is:

1. A system, comprising:
a first device capable of generating heat, wherein the first device is to be cooled using a cooling system having an active cooling component and a passive cooling component.
2. The system of claim 1, wherein the active cooling component includes a liquid coolant and a pump or a compressor to enhance flow of the liquid coolant.
3. The system of claim 2, wherein the liquid coolant is to extract heat generated by the first device.
4. The system of claim 3, wherein the liquid coolant includes one of water, alcohol, glycol, an inert liquid, and a mixture thereof.
5. The system of claim 4, wherein the active cooling component includes single-phase or two-phase cooling.
6. The system of claim 3, wherein the active cooling component includes liquid metal cooling, and wherein the liquid coolant is liquid metal.
7. The system of claim 6, wherein the liquid metal includes one of Indium (In), Gallium (Ga), or a mixture of Indium and Gallium with trace amounts of other metals.
8. The system of claim 3, wherein the active cooling component further includes a heat exchanger to cool the liquid coolant and a pipe loop to transport the liquid coolant.

9. The system of claim 8, wherein the heat exchanger is a remote heat exchanger (RHE).
10. The system of claim 9, wherein the passive cooling component includes a first heat pipe having an evaporation end and a condensation end.
11. The system of claim 10, wherein the evaporation end of the first heat pipe is coupled to the first device, and wherein the condensation end of the first heat pipe is coupled to the heat exchanger.
12. The system of claim 11, further comprising:
a second device capable of generating heat, wherein the second device is to be cooled using a second heat pipe.
13. The system of claim 12, wherein an evaporation end of the second heat pipe is coupled to the second device, and wherein a condensation end of the second heat pipe is coupled to the heat exchanger.
14. A method, comprising:
cooling a first device using a combination of active loop cooling and heat pipe cooling, where in said active loop cooling includes using a flow-enhancing device to enhance flow of a liquid coolant between the first device and a heat exchanger, wherein said heat pipe cooling includes a first heat pipe, and wherein the heat exchanger is used to provide condensation for the first heat pipe.
15. The method of claim 14, wherein the flow-enhancing device is a pump or a compressor.

16. The method of claim 15, wherein the active loop cooling includes single-phase or two-phase cooling, and wherein the liquid coolant includes one of water, alcohol, glycol, an inert liquid, or a mixture thereof.

17. The method of claim 15, wherein the active loop cooling includes liquid metal cooling, and wherein the liquid coolant includes a liquid metal.

18. The method of claim 17, wherein the liquid metal includes one of Indium (In), Gallium (Ga), or a mixture of Indium and Gallium with trace amounts of other metals.

19. The method of claim 15, further comprising:

cooling a second device using said heat pipe cooling, wherein said heat pipe cooling includes a second heat pipe, and wherein the heat exchanger is used to provide condensation for the second heat pipe.

20. An apparatus, comprising:

a first cooling component to provide active cooling to a first heat generating device, the first cooling component including a pipe loop, a flow-enhancer device and a heat exchanger, the pipe loop coupled to the first heat generating device; and

a second cooling component to provide passive cooling to the first heat generating device, the second cooling component including a heat pipe coupled to the first heat generating device and to the heat exchanger.

21. The apparatus of claim 20, wherein the first cooling component further includes a liquid coolant transported by the pipe loop between the first heat

generating device and the heat exchanger, wherein flow of the liquid coolant is enhanced by the flow-enhancer device.

22. The apparatus of claim 21, wherein the flow-enhancer device is a pump or a compressor.

23. The apparatus of claim 22, wherein the liquid coolant includes a liquid metal.

24. The apparatus of claim 23, wherein the liquid metal includes one of Indium (In), Gallium (Ga), or a mixture of Indium and Gallium with trace amounts of other metals.

25. The apparatus of claim 22, wherein the liquid coolant includes one of water, alcohol, glycol, an inert liquid, and a mixture thereof.